

## The Structure of Goal Contents Across 15 Cultures

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The authors investigated the structure of goal contents in a group of 1,854 undergraduates from 15 cultures around the world. Results suggested that the 11 types of goals the authors assessed were consistently organized in a circumplex fashion across the 15 cultures. The circumplex was well described by positing 2 primary dimensions underlying the goals: intrinsic (e.g., self-acceptance, affiliation) versus extrinsic (e.g., financial success, image) and self-transcendent (e.g., spirituality) versus physical (e.g., hedonism). The circumplex model of goal contents was also quite similar in both wealthier and poorer nations, although there were some slight cross-cultural variations. The relevance of these results for several theories of motivation and personality are discussed.

**Keywords:** intrinsic–extrinsic goals, self-determination theory, circumplex structure, cross-cultural research, motivation

Personality psychology has been increasingly successful in describing the basic universal traits and values common across various

cultures of the world. Although work certainly remains to be done in each of these areas, and although cultural variation still is notable across each of these psychological constructs, the literature is quite clear in suggesting five dimensions that underlie human personality traits (McCrae & Allik, 2002) and a two-dimensional circumplex model that organizes and explains the basic human values that people view as important in life (Schwartz, 1992). In the current study, we extend this quest of understanding cross-cultural consistency in personality constructs by examining the content of people's personal goals and aspirations. Specifically, we attempt to determine whether culturally consistent dimensions can be identified that organize the content of personal goals and aspirations in a coherent, theoretically meaningful fashion.

To this end, we draw on theory and research concerning personal goals and aspirations, as well as the closely related but distinct concept of values, in order to (a) define and measure personal goals that differ from each other in focus and content but are relevant to individuals around the world and (b) examine the structural relations between these varied goals and determine whether a model can be derived that organizes them in a consistent way across the 15 cultures from which we sampled.

### Goals and Their Content: A Theoretical Approach

Since the 1980s, psychological research on goals has experienced a real renaissance, as researchers from a variety of theoret-

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ical perspectives have begun to examine a wide range of processes and dimensions relevant to the activation of, success at, and disengagement from the strivings, personal projects, and aspirations that people often pursue (for an early summary of this work, see Pervin, 1989). Alongside this work on such topics as efficacy, conflict, and approach–avoidance, other researchers have examined the content of goals as a way of understanding how people organize their lives and the types of aims for which individuals strive (Emmons, 1989; Kasser & Ryan, 1993, 1996; Roberts & Robins, 2000; Sheldon & Kasser, 1995, 1998). Although the literature on the content of goals is smaller, newer, and perhaps more controversial than is work on other dimensions of goal striving, the content of goals has nonetheless been shown to be an important predictor of outcomes of interest.

One of the more widely researched goal content distinctions concerns the differentiation between intrinsic and extrinsic aspirations (Kasser & Ryan, 1996). Intrinsic goals are defined as those pursuits that are generally congruent with the psychological needs for relatedness, autonomy, and competence proposed by self-determination theory (see Deci & Ryan, 2000; Kasser, 2002b; Ryan & Deci, 2000) and thus are inherently satisfying to pursue, in and of themselves. Intrinsic goals include those for self-acceptance, affiliation, community feeling, and physical health. In contrast, extrinsic goals are primarily concerned with obtaining some reward or social praise; because they are typically a means to some other end or compensate for problems in need satisfaction, they are less likely to be inherently satisfying (see Deci & Ryan, 2000). For instance, research shows that people with strong extrinsic aspirations have more difficulty fulfilling their needs for competence, relatedness, and autonomy (see Kasser, 2002a; Kasser, Ryan, Couchman, & Sheldon, 2004). Financial success, image, and popularity are common extrinsic goals. Research has shown not only that these two types of goals relate in different ways to personal well-being, social behavior, and ecologically relevant activities (Kasser, 2002a; see also Saunders, 2001; Saunders & Munro, 2000), but that the two goals are distinguishable by using factor analyses in various nations, including the United States (Kasser & Ryan, 1996), Germany (Schmuck, Kasser, & Ryan, 2000), Russia (Ryan et al., 1999), and South Korea (Kim, Kasser, & Lee, 2003).

Although this previous research suggests that one fundamental dimension along which the content of goals might vary is whether they are intrinsic or extrinsic, the extant literature is limited in many respects. First, although thus far the cross-cultural generalizability of the distinction between intrinsic and extrinsic goals has been promising, only four relatively economically developed nations have been explored; more nations from a variety of backgrounds need to be studied. Second, although factor analyses have suggested that the two sets of pursuits are distinct, perhaps they lie on a continuum with intrinsic aspirations at one end and extrinsic at the other. To test this possibility, other more sophisticated analytic methods are needed to shed new light on the organization of intrinsic and extrinsic goals. Third, at this point of theoretical development, goals within each type (i.e., intrinsic or extrinsic) have been treated as essentially equivalent, when there may in fact be important differences between individual goals within each type. For example, even though community feeling and physical health both share an intrinsic character, they certainly differ from each other in terms of the types of activities they encourage and the

developmental histories that may lead a person to focus on one or the other. Finally, these seven goals (i.e., self-acceptance, affiliation, community feeling, physical health, financial success, image, and popularity) clearly do not represent a complete taxonomy of the aims for which people strive in life, particularly because some goals are probably neither intrinsic nor extrinsic in nature, as they are neither directly related to psychological need satisfaction nor to the pursuit of rewards and/or praise.

Such limitations spurred us to conduct the present study, which sampled from a wider variety of nations while examining a broader array of goals that we hoped might suggest the existence of a second, orthogonal dimension that organizes individuals' goal pursuits into a circumplex model. Our reading of the literature on motivation and personal goals led us to devise new measures for four additional goals, three of which were inspired by Schwartz's (1992) work on values, that is, the higher order conceptions of the ideal that typically organize people's goals (Emmons, 1999; Schwartz, 1992). The first new aspiration we assessed concerned conformity, or people's attempts to fit in with others in their social surroundings, a concern notable in human behavior and recognized by the classic work of Asch (1951) as well as by theories suggesting that people want not only to stand out from the crowd, but to also blend in (e.g., Brewer, 1991). Second, safety goals are also pointed to by evolutionary (Buss, 1999), attachment (Bowlby, 1988), and terror management theories (e.g., Pyszczynski, Greenberg, & Goldenberg, 2003), which all suggest that people are strongly motivated to feel safe and know that their survival is likely. Third, hedonic goals were added because such motivations have long been examined by psychologists (e.g., Freud, 1933; Morris, 1956; Young, 1961), and people throughout the ages have certainly pursued a variety of sensual pleasures. Finally, the fourth, additional goal we assessed was for spirituality, which often emerges as an important striving for people (Emmons, 1999; Emmons, Cheung, & Tehrani, 1998) and which Kasser (1996) examined in some past work on aspirations.

It seemed likely to us that these additional four goals, combined with the variations described above within intrinsic and within extrinsic goals, might result in a second dimension reflecting tendencies toward either self-transcendent or physical pursuits, or what many religious writings have called the conflicts between the spirit and the flesh. Such a dimension would be consistent with James's (1892/1985) proposed three hierarchically ordered "selves" (or "me"s) "with the bodily me at the bottom, the spiritual me at top, and the extracorporeal material selves and the various social selves between" (p. 57). Freud's (1960) frequent discussions concerning the fundamental conflicts between the id (physical drives) and the superego (the influence of society) also point to such a dimension. More recent empirical work has also suggested such a distinction in goal pursuit. For example, Schwartz's (1992) model of values included a dimension representing self-transcendent versus self-enhancing values, and Brewer and Gardner (1996) proposed that the social selves differ along a dimension ranging from the individual self to the interpersonal self to the collective self (for a review, see Sedikides & Brewer, 2001). If a dimension ranging from self-transcendent to physical organized the goal contents we assessed, it might also help to distinguish among goals within intrinsic and within extrinsic types. For example, the intrinsic goal of community feeling would probably be more self-transcendent than the intrinsic goal of physical health,

Table 1  
*Goal Contents, Descriptions, and Sample Items*

Goal contents	Description	Sample items
Affiliation	To have satisfying relationships with family and friends	"I will have a committed, intimate relationship."
Community feeling	To improve the world through activism or generativity	"I will assist people who need it, asking nothing in return."
Conformity	To fit in with other people	"I will live up to the expectations of my society."
Financial success	To be wealthy and materially successful	"I will be financially successful."
Hedonism	To experience much sensual pleasure	"I will experience a great deal of sensual pleasure."
Image	To look attractive in terms of body and clothing	"My image will be one others find appealing."
Physical health	To feel healthy and free of illness	"I will be physically healthy."
Popularity	To be famous, well-known, and admired	"I will be admired by many people."
Safety	To ensure bodily integrity and safety	"I will have few threats to my personal safety."
Self-acceptance	To feel competent and autonomous	"I will have insight into why I do the things I do."
Spirituality	To search for spiritual or religious understanding	"I will find religious or spiritual beliefs that help me make sense of the world."

which is more physical. Similarly, the extrinsic goal of financial success is probably more physically oriented than goals for popularity or image, given that money can help to buy survival and physical pleasures.

We also believed that these additional four goals would vary with regard to their placement on the intrinsic–extrinsic dimension. First, we expected that neither spirituality nor hedonism goals could be classified as typically intrinsic or extrinsic, because they do not consistently conform to the conceptual criteria of satisfying inherent psychological needs (i.e., for intrinsic goals) or of involving the pursuit of external rewards or praise (i.e., extrinsic goals). As such, spirituality and hedonism might form the basis of the proposed orthogonal dimension of self-transcendent versus physical goals. Opposing sets of predictions can be made with regard to the placement of conformity and of safety along the intrinsic–extrinsic dimension. Regarding conformity, Schwartz's (1992) model would suggest that it might cluster most closely with affiliation aspirations, given that conformity values are adjacent to benevolence values in his research. On the other hand, because conformity goals are primarily concerned with obtaining other people's praise and positive opinions (Kasser, 2002b), they have much in common with extrinsic pursuits like popularity and image. With regard to goals for safety, Schwartz's model demonstrated that values of security oppose those for self-direction, stimulation, and universalism and are thus consistent with values of power. As such, safety goals would be most likely to fall in the realm of extrinsic goals. In contrast, Maslow's (1954) humanistic perspective on needs suggests that security and safety goals would fall with intrinsic goals, as they concern basic psychological needs had by all people (see also Kasser, 2002a; Saunders, Munro, & Bore, 1998).

### The Present Study

To test the ideas presented above, we first administered a survey packet on goals to 1,854 college students from 15 nations around the world. These nations varied in a number of regards, including geography, individualism versus collectivism, and economic wealth, and thus provided an initial opportunity to examine similarities and differences in the structure of goal contents across people from different cultures.

Next, we sought to establish that our measure of goals had acceptable psychometric properties in terms of internal reliability

and cross-cultural validity. Recent work by Spini (2003) on Schwartz's (1992) value measure showed that most value types from the Schwartz Value Survey had configural and metric equivalence across 21 countries.<sup>1</sup> We expected our measure of goal importance, the Aspiration Index, to yield as good psychometric properties as Schwartz's Value Survey. Thus, we hypothesized (Hypothesis 1) that the 11 individual goals described above and in Table 1 would have acceptable internal reliability and that covariance analyses would demonstrate that the subscales have acceptable measurement equivalence across cultures.

Our next task was to determine whether the goals would be consistently and coherently organized across the 15 cultures. That is, like Schwartz's (1992) model of values or the five-factor model of traits (e.g., see McCrae & Allik, 2002), we expected that across different cultures, people would organize their goals in essentially similar ways. In particular, we expected goals to be organized into a "circumplex" structure in which (a) certain goals were compatible with each other while being in conflict with other goals and (b) two dimensions underlay the organization of the goals (Hypothesis 2A). To this end, we predicted that multidimensional scaling (MDS) analyses (e.g., Borg & Groenen, 1997; Davison, 1983; Dillon & Goldstein, 1984) would reveal that intrinsic goals for self-acceptance, affiliation, community feeling, and physical health would be compatible with each other and would lie on a dimension opposite from the extrinsic goals of popularity, financial success, and image, which would in turn be compatible with each other. Second, we expected that spirituality and hedonism goals would form the basis of an orthogonal self-transcendent/physical dimension. We made no hypotheses about the relative placement of conformity and safety, given the competing arguments in the literature about the goals with which they might be

<sup>1</sup> It is difficult to conclude any equivalence across culture from Spini's (2003) results because Satorra–Bentler (SB) scaled difference chi-square test statistics were not correctly estimated. As we explain later in the Method section, Satorra (2000) showed that the difference between two SB chi-square statistics cannot be obtained by computing the simple difference between them (see Satorra & Bentler, 2001). Moreover, root-mean-square error of approximation (RMSEA) differences cannot be criteria because "FITMOD does not compare two RMSEA indices" (Browne, personal communication, April 14, 2003).

Table 2  
*Characteristics of Samples*

Culture	Region or town	<i>n</i>	Language	Sex (% of female)	Age	Race (majority)	Religion	Marital status (% of single)	Year
Australia	Newcastle	91	English	65.9	24.70	95.3% Caucasian	39.5% Protestant 29.6% atheist 25.9% Catholic	87.1	1998–1999
Bulgaria	Sofia	106	Bulgarian	79.2	21.91	100% Caucasian	89.4% Orthodox	90.2	1998
Canada	Montreal	164	French	84.8	24.94	95.2% Caucasian	72.3% Catholic 22.0% Atheist	72.0	2000
China	Beijing	94	Chinese	25.5	21.43	100% Asian	—	84.0	1998
China	Hong Kong	94	Chinese	70.2	20.41	81.5% Asian	100% Protestant	100.0	1998
Colombia	Bogota	146	Spanish	50.7	20.27	—	—	100.0	1998
Dominican Republic	Santo Domingo	70	Spanish	52.9	22.79	—	—	83.3	1998
Egypt	Cairo	105	English	58.7	20.38	97.0% Arabian	70.9% Islamic	89.0	1998
France	Tours	108	French	54.6	20.48	88.4% Caucasian	55.0% Atheist 35.0% Catholic	93.4	2000
Germany	Goettingen	150	German	60.0	21.67	100% Caucasian	62% Protestant 19.3% Atheist 18.7% Catholic	98.7	1998
India	Bombay	123	English	63.3	20.17	98.3% Asian	75.6% Hindu	95.8	1996
Romania	Brasov	100	Romanian	50.0	21.15	—	95.9% Protestant	95.0	1998
South Korea	Seoul	201	Korean	30.5	21.66	100% Asian	53.3% Protestant 24.8% Catholic 20.2% Buddhist	98.5	1997
Spain	Madrid	138	Spanish	56.9	22.32	—	—	99.3	1998
United States	Columbia, MO	164	English	64.2	18.59	83.2% Caucasian	50.3% Protestant 25.5% Catholic	98.2	1997
Total		1,854		57.6	21.48			92.9	

most consistent. In order to most stringently test whether the goals organized themselves into a “circumplex model” (as defined by Fabrigar, Visser, & Browne, 1997 and by Larsen & Diener, 1992), we hypothesized that the goals could be ordered along the circumference of a circle (Hypothesis 2B). To test this hypothesis, we conducted confirmatory covariance analyses using Browne’s (1992) circular stochastic modeling technique (i.e., CIRCUM; Browne, 1995; see *Overview of Analytic Strategy* section).

Finally, to further test whether the configuration, compatibilities, and conflicts of goals were essentially similar across cultures, we used 1997 data on the gross national income per capita (source: <http://www.worldbank.org>) to place each culture into a wealthier group (United States; Quebec, Canada; France; Spain; Germany; Hong Kong, China; South Korea; and Australia; gross national income ranged from \$11,400 to \$30,030 per capita) and a poorer group (the Dominican Republic; Colombia; Romania; Bulgaria; Egypt; India; and Beijing, China; gross national income ranged from \$420 to \$2,500 per capita).<sup>2</sup> We then examined whether the goals were ordered in a similar circumplex configuration in both wealthier and poorer cultures, with the expectation that they would be (Hypothesis 3).

## Method

### Samples

Between 1996 and 2000, we collected 1,984 questionnaires from university students in 15 different countries and provinces: Australia, Bulgaria, Canada (Quebec), China (Beijing and Hong Kong separately), Co-

lombia, the Dominican Republic, Egypt, France, Germany, India, Romania, South Korea, Spain, and the United States. Table 2 presents the main characteristics of the samples in terms of size, geographical location, language in which the survey was administered, percentage of female subjects, mean age, ethnic origin, religion, and marital status. Of the 1,984 participants, 1,854 (93%) had no missing answers on the 57 items of the Aspiration Index and were retained for further analyses.

### Measure: The Aspiration Index

This version of the Aspiration Index was based on earlier versions (Kasser & Ryan, 1993, 1996, 2001) and was designed to measure 11 different goal domains. Subjects were presented with 57 different “goals that you may have for the future” and were asked to rate “how important each goal is to you” on a scale ranging from 1 (*not at all*) to 9 (*extremely*). Odd numbered scale points were given labels of 3 (*a little*), 5 (*moderately*), and 7 (*very*). Eight of the goal subscales were adapted from previous studies (Kasser, 1996; Kasser & Ryan, 1993, 1996) and measured the following domains: financial success (4 items), image (5 items), popularity (4 items), self-acceptance (8 items), affiliation (6 items), community feeling (4 items), physical health (5 items), and spirituality (6 items). Three other goal subscales were developed for this study and measured goals for

<sup>2</sup> Wealthier nations, with a couple of exceptions, tended to be relatively individualistic, whereas poorer nations tended toward collectivism. Given this, any similarity or difference could be interpreted also according to this individualistic–collectivistic dimension. It would be interesting to examine whether self-transcendence goals, such as conformity and community feeling, could possess different meaning in collectivistic and individualistic cultures.



conformity (5 items), hedonism (5 items), and safety (5 items). The items were presented in a random order.

### Procedure

The questionnaire was originally written in English and then translated by competent bilinguals who were either our research collaborators or were supervised by them. Translations, following back-translation procedure (Brislin, 1970), were required for the Bulgarian, Chinese, French, German, Korean, Romanian, and Spanish versions of the Aspiration Index.

The survey packet was distributed to participants on a voluntary basis at universities and colleges around the world. No financial incentives were provided to the students in exchange for their participation, although extra course credit was given on occasion. Some students completed the survey packet in class, whereas others completed it at their own leisure and returned it to the experimenter within a day or two. The survey packet included several other questionnaires besides the Aspiration Index, and one other set of ratings (i.e., likelihood of attainment) was made on the goals composing the Aspiration Index; these data are not relevant to the present set of hypotheses.

### Overview of Analytic Strategy

After first using internal reliability tests to determine which items were to be retained within each of the 11 goal subscales, we conducted a confirmatory factor analysis (CFA) on the retained items to test the proposed 11-factor structure of the Aspiration Index. Because indicators of goodness of fit, such as the comparative fit index (CFI; Bentler, 1990), are not ideal for testing complex models such as this one (Beauducel & Wittmann, 2005), we applied the decision rules of Hu and Bentler (1998, 1999), which concern the root-mean-square error of approximation (RMSEA; Steiger & Lind, 1980) and the standardized root-mean-square residual (SRMR; Bentler, 1995). Specifically, Hu and Bentler's decision rules claim that a model adequately fits the data if the following requirements are satisfied:  $RMSEA \leq .05$  and  $SRMR \leq .06$  or  $RMSEA \leq .06$  and  $SRMR \leq .09$ , respectively.

Next, we tested the measurement equivalence of the subscales to determine whether these goal ratings were invariant across cultures. Equivalence of measurement across cultures was evaluated with multigroup CFAs of unidimensional structural equation models (using EQS Version 6.1 software; Bentler, 2003). Specifically, we performed 11 (one for each goal scale) mean and covariance structures (MACS) analyses (Little, 1997) in each of the 15 cultures. Each of the 11 MACS analyses involved three nested models corresponding to different levels of equivalence across groups (Meredith, 1993; e.g., see also Byrne & Campbell, 1999; Little, 1997; Spini, 2003; Steenkamp & Baumgartner, 1998):

1. *Configural invariance* is tested through models that estimate factor loadings, factor variance, error of variances, and intercepts. The factor loading for each item should be different from zero across the cultures. These first models were considered here as the basic model (or  $M_{\text{configural}}$ ). In our study, acceptable levels of configural invariance mean that the goal (as measured by the scale) is unidimensional in each culture—that is, that only one factor represents the interrelations among the items of the scale.

2. *Metric invariance* is tested through models in which factor loadings are constrained to be equal across cultures. This corresponds to Meredith's (1993) weak invariance. Acceptable levels of metric invariance mean that factor loadings are comparable across the 15 cultures. These metric models ( $M_{\text{metric}}$ ) are nested in the  $M_{\text{configural}}$  models.

3. *Scalar invariance* is tested through models in which factor loadings and intercepts are constrained to be equal across cultures. This corresponds to Meredith's (1993) strong invariance. Acceptable levels of scalar invariance mean that intercepts are comparable across 15 cultures. This level of equivalence is important for testing whether different cultures endorse the

concepts measured (i.e., the latent variable) to different extents. These scalar models ( $M_{\text{scalar}}$ ) are nested in the  $M_{\text{metric}}$  models.<sup>3</sup>

Maximum likelihood estimation procedures are used with SB scaling corrections, allowing the calculation of the SB scaled chi-square value (Satorra & Bentler, 1988, 1994). Two types of fit indices were used: overall and comparative fit indices (see Bollen, 1989). Because these models were simpler than the 11-factor model initially tested (i.e., they tested only 1 factor as opposed to 11), we used the CFI, SRMR, and RMSEA. Furthermore, as recommended by Widaman and Thompson (2003), the CFI (i.e., an incremental fit index) was calculated with statistics from an acceptable independence null model, which is nested in the  $M_{\text{scalar}}$  analyses.<sup>4</sup> Values equal or superior to .95 for the CFI are considered to indicate a good fit to the data (Hu & Bentler, 1999). Similarly, SRMR values equal to or smaller than .08 are considered acceptable (Hu & Bentler, 1999). Finally, the SB scaling corrections allow the calculation of an adjusted RMSEA for non-normal conditions (see Nevitt & Hancock, 2000). Values below .06, with a confidence interval (CI) limit below .08, are used as thresholds for not rejecting a model (Browne & Cudeck, 1992; see also Hu and Bentler, 1999).

In addition to these overall fit indices, two comparative fit indices were also used to statistically evaluate the difference between nested models (i.e.,  $M_{\text{configural}}$  vs.  $M_{\text{metric}}$ ;  $M_{\text{metric}}$  vs.  $M_{\text{scalar}}$ ; see Bollen, 1989). First, we used the scaled difference chi-square test ( $\Delta SB\chi^2$ ; Satorra, 2000; Satorra & Bentler, 2001), which compares two SB chi-square values from nested models rather than computing the simple difference between them (e.g., Byrne & Campbell, 1999). Second, as recommended by Cheung and Rensvold (2002), we also examined the changes in the CFIs (i.e., the difference in the CFIs between two nested models [ $\Delta CFI$ ]) when invariance constraints were added. An absolute value of  $\Delta CFI$  smaller than or equal to .01 indicates that the invariance hypothesis should not be rejected, but when the absolute differences lie between .01 and .02, one should be suspicious that differences exist (Cheung & Rensvold, 2002). One of the advantages of the  $\Delta CFI$  statistic over the  $\Delta\chi^2$  statistic is that it is not as strongly affected by sample size. To sum up, a nonsignificant difference between the  $M_{\text{configural}}$ 's and the  $M_{\text{metric}}$ 's scaled chi-squares or an absolute difference between the  $M_{\text{configural}}$ 's and the  $M_{\text{metric}}$ 's CFIs of .01 or less means that metric invariance is attained. Further, a nonsignificant difference between the  $M_{\text{metric}}$ 's and the  $M_{\text{scalar}}$ 's scaled chi-squares or an absolute difference between the  $M_{\text{metric}}$ 's and the  $M_{\text{scalar}}$ 's CFIs of .01 or less means that scalar invariance is attained.

To examine the circumplex structure of relations among the 11 goal domains, as well as whether the relations were cross-culturally consistent, we used two statistical techniques: (a) nonmetric MDS analyses (e.g., Borg & Groenen, 1997; Davison, 1983; Dillon & Goldstein, 1984) to test the hypothesized two-dimensional component of the goal structure (Hypothesis 2A) and (b) Browne's (1992) circular stochastic modeling (i.e., CIRCUM; Browne, 1995) to test the circumplex component of the hypothesized goal structure (Hypothesis 2B).

The appropriateness of MDS techniques over factor analysis for testing multidimensional hypotheses has been explained elsewhere (e.g., Schwartz, 1992; Schwartz & Bilsky, 1990). In brief, this technique represents the goal factors as points in a two-dimensional space such that the

<sup>3</sup> As Little (1997, note 1) noted, "strong factorial invariance is less biasing than strict factorial invariance (i.e., wherein residual variances are also equated; Meredith, 1993)," and "in practical applications of cross-cultural research . . . an invariant measurement space can be specified."

<sup>4</sup> More specifically, the acceptable independence null model we used corresponded to Widaman and Thompson's (2003) "Model OB" (p. 25, Fig. 1) where, besides constraining the covariances among all manifest variables to zero (only the variance and mean of each manifest variable are freely estimated; these constraints correspond to the traditional independence null model), the intercepts are constrained to be equal across groups.

distance between the points reflects the empirical relations among goals. Thus, goals that lie close to each other are considered by most individuals to be relatively consistent or complementary with each other, whereas those goals that are on opposite sides of the two-dimensional space (and are thus far apart) are viewed by people as in conflict or inconsistent with each other. Because the actual axes resulting from MDS analyses are considered to be arbitrary, they are not assumed to have substantive meaning. Consequently, the MDS solution can be (orthogonally) rotated to draw different meaningful representations. In the MDS analyses conducted below, we used the factor scores rather than the mean scores for each of the 11 goal factors. Then,  $11 \times 11$  dissimilarity matrices for the combined samples were generated with Euclidian distances, and these dissimilarity data were used as input in a two-dimensional MDS of the combined samples.

The choice of a two-dimension solution was motivated by the interpretability of the solution (see Schwartz, 1992, note 10, p. 23) and our hypotheses. Our approach was therefore confirmatory, but we nonetheless tested this two-dimension solution in accord with Davison's (1983) three criteria of interpretability, fit, and reproducibility. The interpretability criterion dictates that the number of dimensions should be the smallest number necessary to incorporate all of the important stimulus features (stimulus orderings or groupings). In terms of fit, we examined the stress indicators and the  $R^2$  measures for one- through five-dimensional solutions, paying particular attention to the dimensions-by-fit plots (i.e., scree plot; see Hair, Anderson, Tatham, & Black, 1995). Finally, reproducibility dictates that the solution be composed of dimensions that occur consistently across subgroups. We thus performed 15 additional MDSs (one for each culture) to determine whether the results from these stress analyses confirmed the results from the overall stress analysis in the combined sample of 1,854 participants.

To examine similarities of the structural configuration across cultures, we examined the 15 aforementioned MDSs. In particular, as described by Schwartz (1992, pp. 35–36), we examined how close or distant each pair of goal factors was to each other in the MDS for each sample. More specifically, for each pair of goal factors, we calculated the distance between the two points that they had been assigned to in the two-dimensional space generated by the MDS.<sup>5</sup> Then, we transformed the distance score into an *ipsative* distance score.<sup>6</sup> Positive ipsative distance scores represent consistent goals, whereas negative ipsative distance scores represent inconsistency. For ease of interpretation, we report not only the mean ipsative distance scores but also the number of samples in which these scores suggested that different pairings of goals were consistent or inconsistent.

As mentioned above, we also tested whether the configuration, compatibilities, and conflicts were essentially similar in wealthier (United States; Canada; France; Spain; Germany; Hong Kong, China; South Korea; and Australia) and in poorer (the Dominican Republic; Colombia; Romania; Bulgaria; Egypt; India; and Beijing, China) cultures. Thus, we recomputed the analyses reported above separately for the two groups of cultures.

Although MDS was largely used to provide spatial representations of the data structure and to observe a circumplex ideal, Gurtman and Pincus (2003, p. 411) noted that "any serious test of the circumplex model should also include application of confirmatory methods. Hence, confirmatory methods offer the logical next step in validating the circumplex properties of a given data set." As such, in order to confirm the circular component of a circumplex structure (Hypothesis 2B), we used Browne's (1992) circular stochastic modeling approach, using CIRCUM (Browne, 1995), which is a structural equation modeling (SEM) program similar to EQS (Bentler, 1995).<sup>7</sup> In particular, CIRCUM evaluates the extent to which an observed correlation matrix fits a particular kind of correlation model referred to by Guttman (1954) as the *circulant matrix*. If it does, the correlation between two variables should be a function of the angle between the variables on the perimeter of a circle<sup>8</sup> (Browne, 1992; see also Fabrigar, Visser, & Browne, 1997; for an extended review on circumplex modeling, see Gurtman & Pincus, 2003). Furthermore, like other standard

SEM programs, CIRCUM yields indices of the goodness of fit of the model, such as the RMSEA. As mentioned before, an RMSEA value close to .06, with a CI limit below .08, is indicative of relatively good fit (Browne & Cudeck, 1992). CIRCUM yields several additional useful maximum likelihood estimates, including the polar angles of common score variables (i.e., location on the circle in relation to a reference variable, whose position is set to 0°), estimates of the communality of each measured variable (i.e., the proportion of variance estimated to represent common variance), and the minimum common score correlation (i.e., the correlation between variables that are 180° apart). CIs for RMSEA and these estimates are also provided.

In the present study, the  $11 \times 11$  Pearson product-moment correlation matrices from goal factor scores (used in MDS) were entered in CIRCUM for analysis. The goal affiliation was arbitrarily designated as the reference variable (i.e., its location was set to 0° and the locations of the other variables were estimated relative to it). No constraints were placed on the location of the variables, the communalities, or the minimum common score correlation (CIRCUM allows these additional constraints to be placed on the model, but they are not necessary for a circumplex hypothesis).

To examine consistencies of the circumplex configuration across cultures, we performed two additional CIRCUM analyses (for wealthier and poor culture groups; see above) following the steps described above. Then, the empirical placements (i.e., estimated angular positions) of the goal variables on the wealthier and poorer culture circles were correlated.

<sup>5</sup> The formula used to calculate the distance between two points in a two-dimension space is as follows:

$$d_i = \sqrt{(|x_{i1} - x_{i2}|^2 + |y_{i1} - y_{i2}|^2)},$$

where  $x_{i1}$  and  $x_{i2}$  are the first (horizontal) axis coordinates for the points 1 and 2, and  $y_{i1}$  and  $y_{i2}$  are the second (vertical) axis coordinates for the points 1 and 2.

<sup>6</sup> An ipsative (from the Latin *ipse*, meaning he, himself) transformation involves standardizing the score within the individual's scores (e.g., see Chan, 2003). Here the ipsative distance scores were calculated within culture's scores with the following formula:

$$id = (d_i - M_{\Sigma D})/\sigma_{\Sigma D},$$

where  $d_i$  is the distance score for the  $i$  pair,  $M_{\Sigma D}$  is the mean of all the  $10 \times 11$   $d_i$ s, and  $\sigma_{\Sigma D}$  is the standard deviation of all the  $10 \times 11$   $d_i$ s. With this formula, smaller distance scores (which represent consistency between two goals) result in negative ipsative scores, whereas larger distance scores (which represent inconsistency) result in positive ipsative scores. To avoid such illogical associations between consistency and negativity and between inconsistency and positivity, we reversed the ipsative distance scores by multiplying them by  $-1$ .

<sup>7</sup> Recently, Schwartz and Boehnke (2004) tended to confirm the Schwartz's circumplex value structure, by using standard CFA. Although CFA is well suited to analyze interrelation among latent variables, it cannot test the circumplex assumptions as defined by Gurtman and Pincus (2003). However, CIRCUM has been elaborated for this specific purpose. Further program developments are needed in order to allow SEM programs to simultaneously model factorial and circumplex structures.

<sup>8</sup> Browne (1992) has demonstrated that a circulant matrix can be "reparametrized" as a Fourier series, such as

$$r_{ij} = \beta_0 + \sum \beta_k \cdot \cos(k \times \theta_d),$$

with  $k = 1$  to  $m$  components in the Fourier series, and where  $r_{ij}$  is the correlation of variables  $i$  and  $j$ , and  $\theta_d$  is the angular discrepancy between their respective polar angles.

## Results

### *Psychometric Characteristics of the Aspiration Index: Internal Reliability and Measurement Equivalence (Hypothesis 1)*

To detect any item that consistently detracted from a subscale's reliability, in each culture we computed reliability coefficients (Cronbach's alpha) and item-total correlations for the items that a priori composed each of the 11 goal domains. These analyses suggested the removal of one item each from the popularity, conformity, affiliation, community feeling, safety, and health domains, and two items each from the hedonism and spirituality domains. The final versions of the subscales showed acceptable levels of internal consistency, as the mean and median alpha reliabilities across countries for the 11 domains of aspirations were, respectively, as follows: financial success, .84 and .83; image, .76 and .74; conformity, .67 and .62; popularity, .73 and .71; self-acceptance, .79 and .73; affiliation, .81 and .75; community feeling, .75 and .71; physical health, .72 and .74; hedonism, .70 and .72; safety, .71 and .70; and spirituality, .90 and .87.

The retained 47 items were then analyzed in a CFA in which we specified 11 distinct (but correlated) latent factors corresponding to the hypothesized goal domains. Fit indices were as follows: SB  $\chi^2(979, N = 1,854) = 4,643.93, p < .001$ ; CFI = .87; SRMR = .050; RMSEA = .045 (90% CI: .044, .046). Although the CFI was slightly below the .90 criteria that is sometimes used for simpler models, the RMSEA and SRMR indices that are more appropriate for complex models such as ours (Beauducel & Wittmann, 2005; Raykov, 1998) provided strong support for the model; that is, both met Hu and Bentler's (1999) decision rules for determining that a model adequately fits the data. Further, the average of the absolute correlation residual (i.e., the discrepancy between observed and predicted correlation matrices) was lower than .10 (i.e., it was .039), and less than 5% of these correlation residuals were higher than .10 (i.e., 95% were below .10); these results also indicate good local fits (Tomarken & Waller, 2003).

Next, we examined measurement equivalence of each goal subscale across cultures to test our first hypothesis. Table 3 shows SB chi-square statistics and overall fit indices for each of the three models testing configural, metric, and scalar invariance, as well as comparative fit indices between nested models. Regarding configural invariance, we could not evaluate this for three subscales (i.e., Community Feeling, Hedonism, and Popularity) because each was composed of only three items. All eight of the remaining goal subscales, however, were invariant and unidimensional across the 15 samples. Regarding metric invariance, although a couple of SRMR values were above .08, most of the CFI and RMSEA values and  $\Delta$ CFI statistics supported the hypothesis, as each item loaded on the relevant goal domain at approximately equal strength across the 15 cultures. In contrast, regarding scalar invariance, although RMSEA values were acceptable for some of the goal domains, other statistics indicated that the scalar invariance hypothesis should be rejected for all the goal models.

In sum, these results supported not only our implicit assumption that the Aspiration Index is composed of 11 factors, but also our first hypothesis by indicating that each of the 11 goal subscales was reliably measuring a unidimensional factor across the different cultures. However, the mean structures of the subscales were varying across the cultures. These results suggest the absence of

between-groups differences in some forms of item bias (e.g., translation, extreme response style; Cheung & Rensvold, 2000; Mullen, 1995), but it remains possible that there are between-groups differences in other response styles (e.g., acquiescence; Cheung & Rensvold, 2000). Because scalar invariance is important in cross-cultural research to compare (latent) means across cultures,<sup>9</sup> any mean difference tests should be interpreted with caution. As this study's hypotheses about goal structures did not require such comparisons, we could conclude that the Aspiration Index's reliability was sufficiently invariant across cultures to proceed with analyses of its structure.

### *Two-Dimensional Representation: Multidimensional Scaling Analyses (Hypothesis 2A)*

*Validation of the two-dimension solution.* As described above, we sought support for the proposed two-dimensional organization of the 11 goals by applying Davison's (1983) three criteria of interpretability, fit, and reproducibility. As we believe is demonstrated below, the interpretability criterion received good support, as the two-dimension solution organized the goal structure in a relatively elegant fashion, and a third dimension was not necessary to conceptualize this organization. Less subjectively, support for the fit criterion came from analyses of the stress indicators and the  $R^2$  measure using the entire sample. The stress indicators were .40, .10, .05, .02, and .01 for one- to five-dimensional solutions, respectively, revealing that the addition of a second dimension increased substantially the fit ( $\Delta$ stress = .30), but the third through fifth dimensions did not increase fit as much ( $\Delta$ stress = .05 or less). Moreover,  $R^2$  measures revealed that the first dimension explained 54% of the variance, and a second dimension added an additional 38%, but the third through fifth dimensions did not add large enough amounts of variance (i.e., < 5%) to warrant their inclusion in the model. In terms of reproducibility, similar patterns of results were also found when MDS analyses were conducted on each of the 15 culture samples individually; here, the median stress indicator for the second dimension was .11. Moreover, the average  $R^2$  change was 20% for an added second dimension, whereas it was only 5% for a third dimension, suggesting again that adding a third dimension provided little in the way of additional information. In sum, these results suggest that a two-dimensional model of goal structure was more parsimonious and valid, as well as more reproducible across the 15 cultures, than was a model including any other number of dimensions.

*An initial model.* Having established that a two-dimensional model worked well to organize the goals, we next used the MDS analyses to examine whether the goals were organized in a way supportive of our hypotheses. The MDS analysis based on the entire sample of subjects yielded the representation in Figure 1.<sup>10</sup>

<sup>9</sup> The hypothesis of equivalent intercepts across numerous samples (e.g., more than 10) is difficult to reach, as found by Spini (2003) with Schwartz's (1992) values. Of course, partial equivalence could also have been tested to assess equivalence in a smaller number of nations, but we shared Spini's and Schwartz's objectives considering only universality and, so, full invariance.

<sup>10</sup> It should be recalled here that MDS analysis yields a two-dimensional space representation without meaningful axes. Positions of the orthogonal axes according to each other (i.e., where the two axes cross each other) are essentially arbitrary and guided by the hypothesis. Therefore, axes should be considered as two orthogonal continuums rather than frontiers that organize goals in rigid categories.



Table 3

*Overall Fit Indices for Configural Models (i.e., Without Equality Constraints), Equal Factor Loadings Models (Metric Invariance), and Equal Means Loadings (Scalar Invariance), and Change in Fit*

Subscale	Items	SB chi-square			Absolute fit indices					Comparative fit indices		
		SB $\chi^2$	df	p	CFI	SRMR	RMSEA	RMSEA CI	$\Delta\text{SB-}\chi^2$	$\Delta\text{df}$	p	$\Delta\text{CFI}$
Hedonism	3											
Metric invariance	3	<b>31.7894</b>	<b>28</b>	<b>.283</b>	<b>.997</b>	<b>.065</b>	<b>.009</b>	<b>[.000, .021]</b>				
Scalar invariance	3	352.9836	56	.000	<b>.956</b>	.152	<b>.054</b>	<b>[.048, .059]</b>	391.44	28	.000	−.041
Safety	4	<b>38.2179</b>	<b>30</b>	<b>.144</b>	<b>.995</b>	<b>.032</b>	<b>.012</b>	<b>[.000, .023]</b>				
Metric invariance	4	121.0954	72	.000	<b>.970</b>	.096	<b>.019</b>	<b>[.013, .025]</b>	81.81	42	.000	−.025
Scalar invariance	4	451.4008	114	.000	.928	.121	<b>.040</b>	<b>[.036, .044]</b>	426.05	42	.000	−.042
Physical Health	4	149.1787	30	.000	<b>.950</b>	<b>.063</b>	<b>.046</b>	<b>[.039, .054]</b>				
Metric invariance	4	236.2161	72	.000	.932	.137	<b>.035</b>	<b>[.030, .040]</b>	96.74	42	.000	−.019
Scalar invariance	4	861.3459	114	.000	.858	.394	<b>.060</b>	<b>[.056, .063]</b>	1,027.56	42	.000	−.074
Self-Acceptance	7	325.1833	210	.000	<b>.956</b>	<b>.065</b>	<b>.017</b>	<b>[.013, .021]</b>				
Metric invariance	7	426.2373	294	.000	<b>.950</b>	.105	<b>.016</b>	<b>[.012, .019]</b>	<b>102.55</b>	<b>84</b>	<b>.083</b>	−.006
Scalar invariance	7	986.0803	378	.000	.907	.124	<b>.030</b>	<b>[.027, .032]</b>	939.00	84	.000	−.043
Affiliation	5	<b>99.6315</b>	<b>75</b>	<b>.030</b>	<b>.985</b>	<b>.047</b>	<b>.013</b>	<b>[.004, .020]</b>				
Metric invariance	5	<b>164.0732</b>	<b>131</b>	<b>.027</b>	<b>.980</b>	.100	<b>.012</b>	<b>[.004, .017]</b>	<b>65.47</b>	<b>56</b>	<b>.181</b>	−.005
Scalar invariance	5	420.4861	187	.000	.943	.111	<b>.026</b>	<b>[.023, .029]</b>	375.68	56	.000	−.037
Community Feeling	3											
Metric invariance	3	<b>33.1505</b>	<b>28</b>	<b>.230</b>	<b>.996</b>	<b>.067</b>	<b>.010</b>	<b>[.000, .021]</b>				
Scalar invariance	3	134.6749	56	.000	<b>.987</b>	<b>.071</b>	<b>.028</b>	<b>[.022, .033]</b>	113.07	28	.000	−.009
Spirituality	5	119.8520	75	.001	<b>.995</b>	<b>.034</b>	<b>.018</b>	<b>[.012, .024]</b>				
Metric invariance	5	231.3218	131	.000	<b>.988</b>	.100	<b>.020</b>	<b>[.016, .025]</b>	116.43	56	.000	−.006
Scalar invariance	5	553.7881	187	.000	<b>.982</b>	.114	<b>.033</b>	<b>[.029, .036]</b>	426.12	56	.000	−.006
Conformity	4	74.7544	30	.000	<b>.987</b>	<b>.058</b>	<b>.028</b>	<b>[.020, .036]</b>				
Metric invariance	4	167.4642	72	.000	<b>.972</b>	.095	<b>.027</b>	<b>[.021, .032]</b>	91.77	42	.000	−.015
Scalar invariance	4	1,382.3340	114	.000	.848	.324	.078	<b>[.074, .081]</b>	1,879.05	42	.000	−.124
Popularity	3											
Metric invariance	3	32.0619	28	<b>.272</b>	<b>.998</b>	<b>.064</b>	<b>.009</b>	<b>[.000, .021]</b>				
Scalar invariance	3	203.5553	56	.000	<b>.988</b>	<b>.074</b>	<b>.038</b>	<b>[.032, .043]</b>	190.30	28	.000	−.010
Image	5	138.0259	75	.000	<b>.980</b>	<b>.052</b>	<b>.021</b>	<b>[.016, .027]</b>				
Metric invariance	5	262.8648	131	.000	<b>.958</b>	.103	<b>.023</b>	<b>[.019, .027]</b>	126.34	56	.000	−.022
Scalar invariance	5	907.6270	187	.000	.909	.197	<b>.046</b>	<b>[.043, .049]</b>	891.10	56	.000	−.049
Financial Success	4	110.8379	30	.000	<b>.978</b>	<b>.042</b>	<b>.038</b>	<b>[.031, .046]</b>				
Metric invariance	4	194.7192	72	.000	<b>.966</b>	.100	<b>.030</b>	<b>[.025, .035]</b>	80.68	42	.000	−.012
Scalar invariance	4	513.0700	114	.000	<b>.953</b>	.113	<b>.044</b>	<b>[.040, .047]</b>	373.01	42	.000	−.013

Note. SB = Satorra–Bentler; SB  $\chi^2$  = SB adjusted chi-square; CFI = robust confirmatory fit index (Bentler, 1990) based on the acceptable null model SB chi-square (CFI  $\geq$  .95 in bold); SRMR = standardized root-mean-square residual (SRMR  $<$  .08 in bold); RMSEA = robust root-mean-square error of approximation (RMSEA  $\leq$  .06 in bold); CI = confidence interval (upper limit  $<$  .08 in bold);  $\Delta\text{SB}\chi^2$  = difference in SB  $\chi^2$  for nested models (i.e., the configural versus the metric invariance models; the metric invariance versus the scalar invariance models) adjusted following Satorra and Bentler (2001);  $\Delta\text{CFI}$  = difference in CFI for nested models (absolute  $\Delta\text{CFI}$   $<$  .02 in bold).

Examination of this figure yields several conclusions. First, the goal importance ratings do indeed appear to be organized in a circumplex fashion. Second, one of the dimensions that seemed to organize goal placements (represented in Figure 1 as the vertical dimension) appears quite similar to what we suggested would be self-transcendent versus physical. On the top of this dimension are aspirations that represent going beyond or outside of oneself; spiritual strivings are the primary representation of this end of the dimension, and community feeling and conformity aspirations are also involved. At the bottom of this dimension are aspirations that primarily concern the physical body; hedonism aspirations are especially representative of this, as are safety, physical health, and financial success aspirations.

The other, horizontal dimension seems to support previous work suggesting that goals are also organized along an intrinsic versus extrinsic dimension. On the right of the circumplex are the theorized intrinsic goals of self-acceptance, affiliation, community feeling, and physical health. Notably, safety aspirations also fall

into this cluster, as would be predicted by Maslovian theory (Maslow, 1954). On the left of this axis are the three extrinsic goals found in past research (i.e., financial success, image, and popularity) as well as the newly measured conformity goal, which Kasser (2002b) predicted would fall with these extrinsic goals. In sum, the results suggest that across cultures people do experience goals as falling along an intrinsic–extrinsic dimension.

*Consistency of the model across cultures.* Figure 1 presents a model of a configuration of goals that ignores potential differences between the cultures by averaging across them. We undertook several different types of analyses to test whether the compatibilities and conflicts represented in Figure 1 also revealed themselves within individual cultures.

To begin, we computed a measure of the ipsative distance between pairs of goals on the basis of MDS analyses within each culture. As described above, we considered goals to be compatible if this ipsative distance measure was positive and conflictual if it was negative. One way to examine whether the goal pairs were



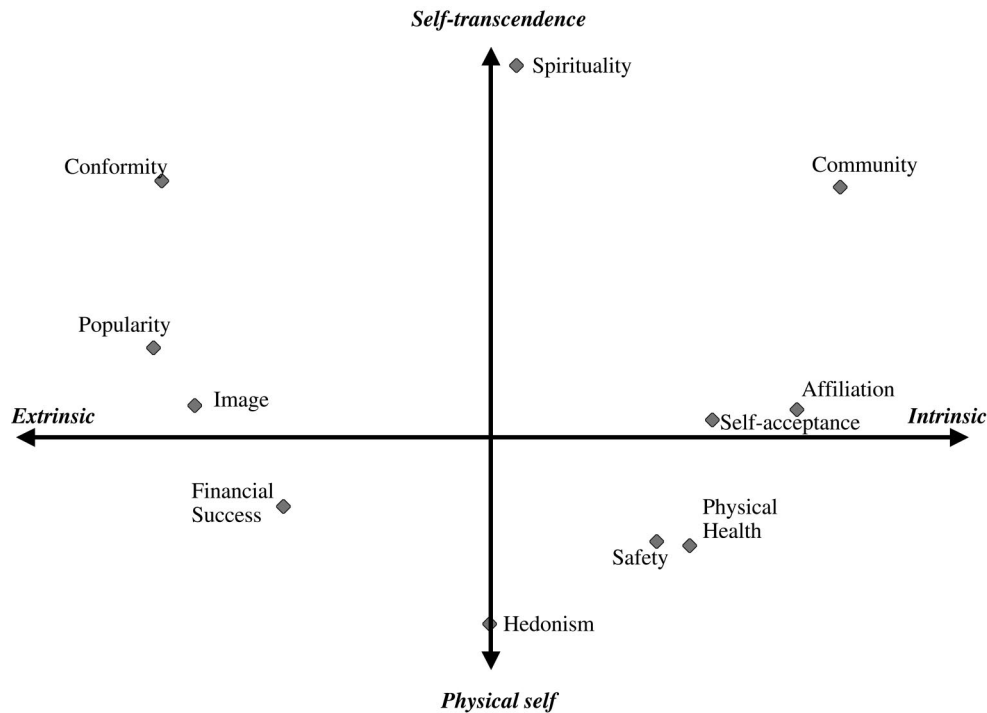


Figure 1. Two-dimensional representation of the goals resulting from multidimensional scaling analysis for all samples.

compatible or conflictual was to calculate the proportion of cultures (out of the 15) in which the goal pairs were either compatible or conflictual.<sup>11</sup> This method, however, did not provide an indication of the strength of the compatibility or conflict. Thus, we also computed the mean ipsative distance for each goal pairing and used *t* tests to determine whether this mean ipsative distance score was significantly different from zero (i.e., the number that represents neither conflict nor compatibility). We followed this procedure for each goal pair by working clockwise around the circumplex and for the clusters of goals at each end of the dimensions resulting from the MDS analyses.

As can be seen in the second and third columns of Table 4 (see also *Note*), each goal type was compatible with its adjacent goal types on the circumplex in at least 10 samples (67%); six of the compatibilities occurred in 14 (93%) or all of the cultures. Further, the mean ipsative distance score was significantly greater than zero (indicating compatibility) in all but three cases: the compatibilities of conformity and spirituality, of hedonism and safety–physical health, and of hedonism and financial success. Despite these few variations, the results overall indicate that most cultures agree that goals next to each other in Figure 1 are compatible and that these compatibilities are reasonably strong.

Next we examined the compatibilities of clusters of goals representing the ends of the two dimensions represented in Figure 1. As can be seen in the bottom portion of Table 4, the intrinsic and extrinsic clusters were each compatible within themselves in all 15 cultures, and the strength of this compatibility was significant (i.e.,  $>0$ ). Results were somewhat weaker for the physical cluster, as it was apparent in only 11 of 15 cultures, and even weaker for the self-transcendence cluster, which occurred in only 9 of the 15

cultures and whose mean ipsative distance score was not significantly different than zero.

Turning now to the conflicts between clusters, intrinsic and extrinsic goals were clearly in conflict with each other, as were the physical and self-transcendence dimensions. As can be seen there, the intrinsic and extrinsic clusters were each in conflict with each other in all 15 cultures, and the strength of this conflict was significant (i.e.,  $<0$ ). A very similar pattern of results can be seen concerning the physical/self-transcendence conflict.

*Wealthier and poorer cultures.* Using MDS analyses, we next examined whether the basic ordering of goals around the circumplex was essentially the same in wealthier (Figure 2A) and poorer (Figure 2B) cultures. As can be seen in Figure 2, the ordering was essentially the same, although three small differences in the relative placement of goals emerged. First, safety and physical health appeared to be somewhat closer to hedonism (and thus had a somewhat more physical character) in the wealthier cultures than in the poorer cultures. Second, community feeling and conformity

<sup>11</sup> For compatibilities among goal types, we reported the mean of distances for each possible pair of value type. For instance, in the case of the conformity–spirituality–community feeling cluster, we reported the mean of the conformity–spirituality, the community feeling–conformity, and the spirituality–conformity ipsative distances. For conflicts among value types, we reported the mean of distances for each possible conflict of value type. For instance, in the case of the affiliation/self-acceptance versus appearance–social recognition conflict, we reported the mean of the affiliation–appearance, the affiliation–social recognition, the self-acceptance/appearance, and the self-acceptance/social recognition ipsative distances.

Table 4  
Hypothesis Testing on Compatibilities and Conflicts Among Goal Types

Goal type	Proportion of cultures (N = 15)	Mean ipsative distance	Wealthier cultures (n = 8)	Poorer cultures (n = 7)	t test on ipsative distances between wealthier and poorer cultures (df = 13) <sup>a</sup>
Compatibilities (circumplex-like perspective two-by-two)					
Spirituality–community feeling	13/15	0.54**	7/8	6/7	–0.570
Community feeling–affiliation/self-acceptance <sup>b</sup>	13/15	0.56**	6/8	7/7	–0.665
Affiliation/self-acceptance <sup>b</sup> –physical health/safety <sup>b</sup>	14/15	0.69***	8/8	6/7	1.370
Physical health/safety <sup>b</sup> –hedonism	11/15	0.62 <sup>c</sup> *	7/8	4/7	0.059
Hedonism–financial success	12/15	0.46 <sup>c</sup> *	6/8	6/7	–1.369
Financial success–image/popularity <sup>b</sup>	15/15	1.08***	8/8	7/7	1.417
Image/popularity <sup>b</sup> –conformity	14/15	0.64***	8/8	6/7	2.988 <sup>c</sup> *
Conformity–spirituality	10/15	0.33	5/8	5/7	–0.665
Compatibilities (dimensional perspective by cluster)					
Community feeling/affiliation/self-acceptance/physical health/safety (i.e., intrinsic cluster)	15/15	0.67***	8/8	7/7	–0.492
Conformity/image/popularity/financial success (i.e., extrinsic cluster)	15/15	0.82***	8/8	7/7	2.938 <sup>c</sup> *
Community feeling/spirituality/conformity (i.e., self-transcendence) cluster	9/15	0.11	3/8	6/7	–3.220 <sup>d</sup>
Financial success/hedonism/safety/physical health (i.e., physical self) cluster	11/15	0.51**	5/8	6/7	–0.945
Conflicts (dimensional perspective cluster-against-cluster)					
Community feeling/affiliation/self-acceptance/physical health/safety vs. conformity/image/popularity/financial success (i.e., intrinsic vs. extrinsic)	15/15	–0.46***	8/8	7/7	–0.044
Conformity/spirituality/community feeling vs. financial success/hedonism/physical health/safety (i.e., self-transcendence vs. physical self)	15/15	–0.66***	8/8	7/7	–0.904
Community feeling vs. appearance/social recognition/financial success	14/15	0.99**	8/8	6/7	2.171 <sup>†</sup>
Conformity vs. affiliation/self-acceptance/physical health/safety	12/15	0.71**	6/8	6/7	–0.996

Note. Unless otherwise indicated, values are nonsignificant at  $p > .10$ .

<sup>a</sup> Between-group coding: 1 = wealthy cultures, 2 = poorer cultures. <sup>b</sup> Compatibilities between affiliation/self-acceptance (15/15;  $-1.51^{***}$ ), physical health/safety (13/15;  $-0.97^{***}$ ), and appearance/social recognition (14/15;  $-1.37^{***}$ ) were strong, and then they were considered as a pair rather than individually. <sup>c</sup> Test statistics were nonsignificant after Bonferroni adjustment according to Jaccard and Wan's (1996, p. 30) method. <sup>d</sup> It should be noted that we dropped out Chinese sample in this  $t$  test because it seemed to be an outlier. The mean for the poorer nation group including China was  $-.30$ , and the  $t$  test was close to significance,  $t(13) = 1.747$ ,  $p < .10$  (see Footnote 12).

<sup>†</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

appeared to be somewhat closer to spirituality (and thus had a somewhat more self-transcendent quality) in the poorer cultures than in the wealthier cultures. Third, financial success appeared to have a somewhat less physical character and a somewhat less extrinsic flavor in the poorer cultures, although it still fell with the other extrinsic aspirations. Again, however, these small differences do not eclipse the overall similarity between Figures 2A and 2B.

We next examined the proportion of wealthier and poorer cultures in which ipsative distance scores for the goal pairings were above or below zero, as above. These results suggested similar levels of compatibility (or conflict) for wealthier and poorer cultures, except in two cases. First, the compatibility of physical

health–safety and hedonism was weaker in the poorer cultures. Second, the self-transcendence cluster (i.e., community feeling, spirituality, and conformity) was not as compatible within itself for the wealthier cultures.

Next, we examined whether the mean ipsative distance scores for compatibilities or conflicts were different in size between the wealthier and the poorer cultures. Notably, the degrees of freedom (13) here were quite small, and so results should be treated with extreme caution. Two significant differences between rich and poor cultures emerged, as reported in Table 4. First, the extrinsic cluster (i.e., popularity, image, financial success, and conformity) of goals was significantly more compact in wealthier cultures than

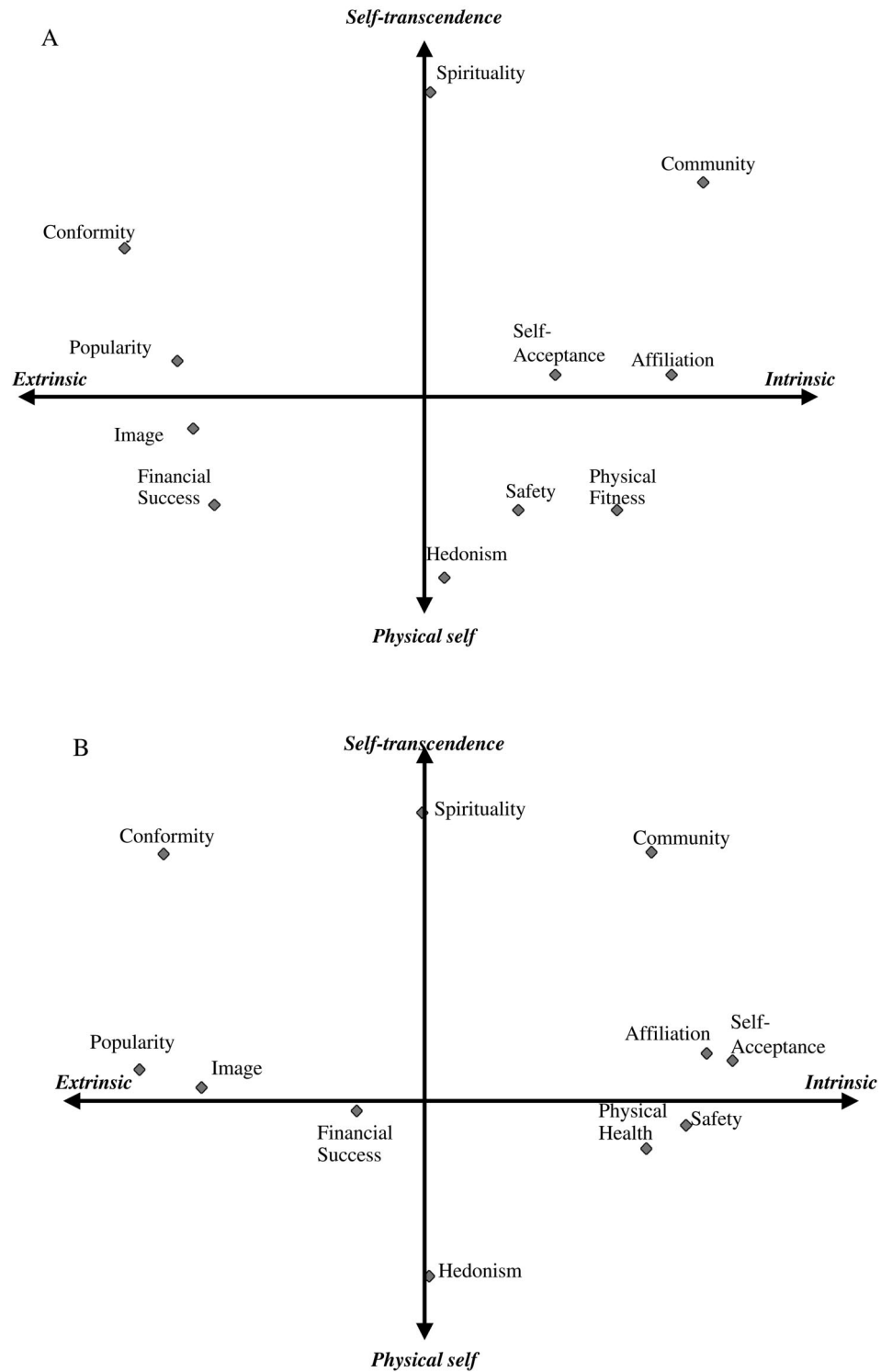


Figure 2. Two-dimensional representation of the goals resulting from multidimensional scaling analysis for wealthy countries (A) and poor countries (B).

in poorer cultures ( $M = -1.01$  vs.  $M = -0.61$ ),  $t(13) = -2.938$ ,  $p < .05$ . Second, the self-transcendence goal cluster was more compact in the poorer cultures ( $M = -.50$ )<sup>12</sup> than in the wealthier cultures ( $M = .07$ ),  $t(12) = 3.220$ ,  $p < .007$ .

### *Circumplex Representation: CIRCUM Analysis (Hypothesis 2B)*

*An initial model.* We next examined whether the Aspiration Index would yield a circular configuration, which is a more specific hypothesis than the prediction that the organization would reflect a two-dimensional space (Gurtman & Pincus, 2003). This subsequent step (after MDS analysis) was important because it permitted us to validate the circumplex shape of goal placements on the two-dimensional representation that the MDS results showed in Figures 1, 2A, and 2B.

The CIRCUM analysis converged (residual cosine  $< 0.0001$ ) after 15 iterations. The RMSEA was .065 (90% CI: .058, .072), indicating a close fit. All ratios of reproduced variances to input variances were fairly close to 1, ranging from 0.98 to 1.019. The estimated polar angles are represented graphically in Figure 3, and their point estimates and 95% CIs are shown in Table 5. The estimated item communality indices (i.e., the correlations between measured and common score variables) ranged from .54 to .85. As can be seen in Figure 3, positions of goal variables on the circle are similar to those obtained with MDS. This result confirms that the nature of the relationships among goal contents can be described as an ordering of variables along the circumference of a circle.

*Wealthier and poorer cultures.* The results from CIRCUM analyses showed that the basic ordering of goals around the circle was essentially the same in wealthier and poorer cultures (see Table 5). Furthermore, the polar position of the 11 variables was almost identical in wealthier and poorer cultures (correlation = .99). As with MDS, a couple of small differences in the relative placement of goals emerged, however. First, safety and physical health had slightly different positions in the wealthier and poorer cultures. Second, as observed in MDS results, financial success appeared to have a somewhat less extrinsic flavor in the poorer cultures, being a bit closer to affiliation than in wealthier cultures (angle =  $81^\circ$  vs.  $108^\circ$ ).

## Discussion

The current study examined the goal importance ratings of 1,854 college students from 15 cultures around the world in an attempt to better understand (a) what goals people typically strive for and (b) how those goals are organized in people's psyches. Given the consistent organizations that have emerged for personality traits (e.g., McCrae & Allik, 2002) and for values (Schwartz, 1992), we were interested in the extent to which consistent results would occur for importance ratings of goal contents.

### *Overview of Results*

We began by demonstrating the reliability and cross-cultural validity of the measure we implemented in this study (the Aspiration Index) through a series of analyses, including MACS (Little, 1997). Our results suggested that the 11 goal domains assessed herein each had acceptable internal reliability and measurement

equivalence across the 15 cultures. These validity checks on the Aspiration Index also suggested that the 11 different domains of goals we assessed are notable cross-culturally (see Table 2). Multidimensional scaling analyses suggested that two dimensions best summarized the organization of the goals; these MDS analyses along with ipsative distance analyses and confirmatory CIRCUM analyses further showed that the goal-importance ratings were organized in a very similar circumplex fashion across cultures (see Figures 1 and 3), with some goals viewed as consistent with each other and other goals viewed as being in conflict with each other. Despite a few small cross-cultural variations, the two-dimensional circumplex organization of goals was essentially the same in both wealthier and poorer nations (see Figures 2a and 2b and Tables 4 and 5).

The 11 goals that we assessed in this study were on the whole well organized by two underlying dimensions suggested by previous empirical and theoretical work. The first dimension supports past work from the self-determination theory tradition (e.g., Deci & Ryan, 2000; Kasser, 2002b; Kasser & Ryan, 1996), suggesting that goals differ in terms of whether they are intrinsically oriented and focused on the satisfaction of inherent psychological needs or whether they are extrinsically oriented and focused on rewards and praise. The current data confirmed past research that intrinsically oriented goals included self-acceptance, affiliation, community feeling, and physical health; safety goals also clustered here, in line with predictions derived from Maslovian theory (Maslow, 1954). Extrinsically oriented goals included financial success, image, and popularity, confirming past work; conformity was also added to this list, as predicted by Kasser (2002b). It is particularly important to note that MDS analyses including ipsative distance scores suggested that the intrinsic and extrinsic clusters were strongly consistent within themselves and strongly opposed to each other in all 15 cultures surveyed.

The second dimension represents goals that are primarily concerned with maintaining and enhancing one's own physical pleasure and survival as opposed to those that concern something higher; this dimension is reflected not only in religious writings but also in the theories of several psychologists (e.g., James, 1892/1985). Specifically, the self-transcendent end of the dimension included goals that involve matching society's desires (e.g., conformity), benefiting society and future generations (e.g., community feeling), and seeking out universal meanings and understandings (e.g., spirituality), whereas the physical end concerned bodily pleasures (e.g., hedonism), physical survival (e.g., safety and health), and the material means to both of these (e.g., financial success). Although this self-transcendent versus physical dimension was clearly identified and the two sets of pursuits were certainly in opposition with each other, we also note that neither self-transcendent nor physical goals were as strongly consistent within themselves as were intrinsic and extrinsic goals (see results on ipsative distance scores, Table 4). Although this does not invalidate the self-transcendent versus physical dimension, it does suggest that the intrinsic versus extrinsic dimension is powerful and attracts goals on the right and left sides of the two-dimensional space.

<sup>12</sup> It should be noted that we dropped out the Chinese sample in this  $t$  test because it seemed to be an outlier. The mean for the poorer nation group including China was  $-.30$ , and the  $t$  test was close to significance:  $t(13) = 1.747$ ,  $p < .10$ .



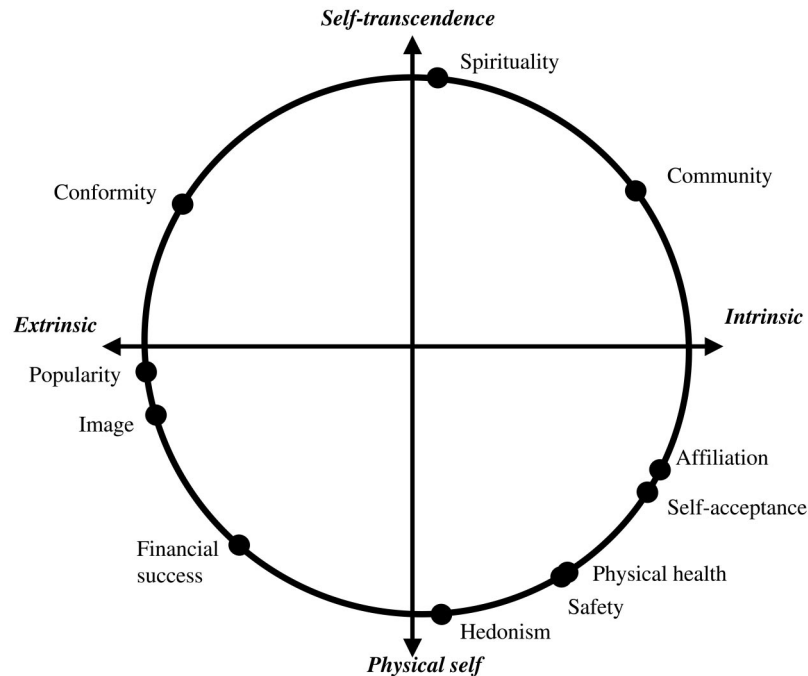


Figure 3. Circular representation of the goals, resulting from CIRCUM analysis for all samples.

Although the results described above were on the whole consistent in both wealthier and poorer cultures, two differences based on cultural wealth are worthy of comment. Given the low degrees of freedom for these analyses, the following speculations should be treated with caution. First, financial success had a less extrinsic and less physical character in the poorer cultures than in the wealthier cultures. That is, financial success was further from hedonism and closer to safety–physical health goals in the poorer cultures than in the wealthier cultures. This makes good sense, given that financial success in poorer cultures is probably more likely to concern basic survival than in wealthier cultures, where financial success is more often a

means to acquire status and nonessential pleasures (i.e., goals related to image and popularity; e.g., see Wong & Ahuvia, 1998). Similarly, the finding that financial success aspirations were somewhat closer to affiliation in poorer nations than in wealthier nations might reflect that individuals in poorer nations may strive to make money to ensure the basic welfare of those they care about. Second, the compatibilities of the clusters defining each end of the self-transcendent versus physical dimension were somewhat weaker in the poorer cultures than in the wealthier ones. At this point of our investigations, it is unfortunately difficult to explain this last difference between wealthier and poorer cultures.

Table 5

*Point Estimates and 95% Confidence Intervals (CIs) of Variable Polar Angles for the Total Sample as Well as for Wealthier and Poorer Culture Groups*

Goal type	Total sample ( <i>N</i> = 1,854)		Wealthier cultures ( <i>n</i> = 815)		Poorer cultures ( <i>n</i> = 1,039)	
	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI
Affiliation	0°	[0, 0]	0°	[0, 0]	0°	[0, 0]
Self-acceptance	6°	[0, 12]	6°	[355, 17]	1°	[353, 8]
Physical health	31°	[24, 37]	32°	[16, 47]	34°	[25, 43]
Safety	31°	[24, 39]	37°	[24, 49]	32°	[23, 41]
Hedonism	59°	[51, 68]	67°	[50, 84]	63°	[52, 74]
Financial success	105°	[98, 113]	108°	[95, 122]	81°	[71, 91]
Image	138°	[131, 146]	135°	[122, 148]	129°	[119, 140]
Popularity	147°	[139, 155]	139°	[125, 153]	144°	[132, 156]
Conformity	184°	[175, 193]	174°	[158, 190]	192°	[180, 205]
Spirituality	248°	[238, 259]	252°	[235, 269]	274°	[260, 289]
Community feeling	297°	[289, 305]	284°	[270, 299]	292°	[281, 302]

Note. Correlation between wealthier and poorer culture point estimates = .99.

### *Theoretical Implications*

The two orthogonal dimensions of intrinsic versus extrinsic and self-transcendent versus physical provide an interesting and intuitively appealing way to categorize and understand the nature of different types of goals and perhaps of human motivational systems. That is, these results suggest that an understanding of a consciously articulated goal for which a person might strive can be classified on the basis of how much it is oriented toward inherent psychological needs or to external rewards or praise and how much it is oriented toward one's own physical pleasure and survival or toward societally and spiritually self-transcendent aims. To exemplify this, let us follow the circumplex presented in Figures 1–3 around the circumference, beginning with spirituality. Spirituality goals are clearly self-transcendent, concerning themselves with large universal issues outside of one's physical self, but they are inherently neither intrinsic nor extrinsic in nature, as spirituality is sometimes pursued for satisfaction of intrinsic needs (as when a sense of communion with one's church is attained) but can also be motivated largely by fears of punishment and by guilt (Ryan, Rigby, & King, 1993). Community feeling has a self-transcendent quality, being concerned with the welfare of society and future generations, but it is also intrinsic, as such pursuits can frequently satisfy needs for relatedness as well as for competence and autonomy. Self-acceptance and affiliation are clearly intrinsic in nature, as they very directly relate to the satisfaction of inherent psychological needs, but they fall midway between the physical and the self-transcendent, as they primarily concern the personal, psychological realm of the ego (Freud, 1960); the material-social self (James, 1892/1985); or the individual or relational selves (Brewer & Gardner, 1996). Physical health and safety also fall with intrinsic goals, as all people need to feel safe and healthy (Bowlby, 1988; Pyszczynski, Greenberg, & Solomon, 1997); these goals are more physically based than the other intrinsic goals, however, given that health and safety concern bodily integrity. Hedonism is clearly concerned with the body, although its focus on pleasure rather than safety moves it out of the realm of intrinsic pursuits; further, the fact that hedonism can sometimes be pursued for sheer pleasure but frequently is a way to avoid that which is anxiety provoking (Baumeister, 1991) shows that it is neither inherently intrinsic nor extrinsic in nature (see also Veenhoven, 2003). Financial success, with its focus on rewards and social status, is an extrinsic goal but has a physical flavor given that money is typically used to ensure survival and to purchase momentary, fleeting pleasures of the flesh. Image and popularity share an extrinsic character but are more self-transcendent than financial success, with their greater focus on others' opinions. Finally, conformity typifies the blending of extrinsic concerns for fitting in to others' desires with the self-transcendent concern of that which is outside of one's self (i.e., society).

The fact that these characterizations can be made with some degree of generalizability given their consistency across 15 nations suggests that motivational systems, as they concern goals, involve some commonality across people, regardless of their cultural situation. Specifically, as they approach their goals in life, people apparently take into consideration their psychological needs (intrinsic), their physical survival and pleasure (physical), their desires for rewards and praise (extrinsic), and their existential quest to have a meaningful place in the broader world (self-

transcendence). These influences on goals might be considered as four occasionally overlapping but sometimes conflictual motivational systems that people must negotiate as they make their way through life. Of course, some individuals will organize their lives more around one of these systems than around others; some will be spiritual individuals who attempt to solve the problems of the world, others will involve themselves in the pleasures of the body, others will pursue wealth and status, and others will look for a simpler life focused on family and personal growth. In future work, we hope to build on this and past research to examine whether such clusters of individuals can be identified and whether people's well-being relates to the choices they make about how their goals in life represent and blend these basic motivational systems.

On a final theoretical note, it is interesting to see that our present circumplex model had both similarities with and differences from Schwartz's (1992) well-known value model. Like Schwartz, our analyses found that goal-importance ratings were organized in a very similar circumplex fashion across cultures, as some goals were relatively consistent with each other whereas other goals were in conflict with each other. Second, two dimensions were found to underlie the goal-importance ratings, but they were not exactly the same as what Schwartz found in his work on values. The first dimension of intrinsic versus extrinsic goals that we identified as underlying goal pursuits bears relatively little conceptual similarity to Schwartz's dimension of openness to change versus conservatism. The second dimension, which we identified as self-transcendent versus physical, certainly bears a conceptual resemblance to Schwartz's self-transcendent versus self-enhancing dimension, even if the goals comprising the dimensions are not exactly the same. That is, we found that strivings for financial success, hedonism, physical health, and safety that are primarily concerned with maintaining and enhancing one's own physical pleasure and survival do in fact cluster together and oppose another cluster that is concerned with something higher, be it society's desires (e.g., conformity), benefiting society and future generations (e.g., community feeling), or transcending the self (e.g., spirituality).

Another difference between our results in Figures 1 and 3 and those of Schwartz (1992) concerns the placement of two of the goals in the circumplex. First, Schwartz found that conformity values lie between benevolence and security, whereas in our data, such goals were almost directly opposed to the two parallel goals we assessed (i.e., affiliation and safety). Our understanding of this result is that conformity goals are a type of extrinsic pursuit, given that they primarily concern desires to fit in with others and receive social praise for being one of the crowd (see above). Indeed, conformity goals did cluster with other extrinsic goals of image and popularity in 14 of 15 cultures. Safety goals were the second pursuit that yielded results rather different from Schwartz's model. Security values in Schwartz's model are wedged between conformity-tradition and power, whereas our results show safety as opposing these extrinsic-type pursuits and instead having a physical and intrinsic flavor. We believe that these results suggest that when safety is considered at the level of a personal goal rather than a value, it clusters with other types of goals that concern the satisfaction of psychological needs. That is, just as intrinsic goals for self-acceptance, affiliation, and community feeling are relatively good ways to satisfy one's psychological needs, safety goals

might concern other needs whose satisfaction is a prerequisite for good psychological health. Examination of the items composing the safety goal and the fact that it landed most closely to physical health goals in the circumplex both suggest that the aim of safety is primarily about ensuring physical survival, which of course is an important motivator of human behavior recognized by many theories (see above) and is probably a need in its own right (Kasser, 2002; Maslow, 1968).

### *Limitations and Future Directions*

Although we believe that the present results provide some important information about the fundamental organization of human strivings and pursuits, our study is of course limited in many respects. First, research that involves latent variables and latent dimensions, such as those identified via CFA and MDS, are not immune from the subjectivity involved in the labeling process. The present study was no exception. We therefore acknowledge that our labeling of the two dimensions in the goal circumplex was motivated primarily by our theoretical approach concerning goal structure. Thus, just as some researchers have relabeled Schwartz's (1992) dimensions (e.g., Oishi, Schimmack, Diener, & Suh, 1998; Rohan, 2000), we acknowledge that other researchers may have potentially different ways of labeling the dimensions we identified.

A second limitation of the study concerns sampling. Our sample consisted only of college students, who of course are not a representative sample of people in general and are probably even less representative of people who live in the poorer cultures from which we sampled. Although the intrinsic-extrinsic dimension has been found in samples of U.S. and German adults (Kasser & Ryan, 1996; Schmuck, 2001; Sheldon & Kasser, 2001) and Schwartz and Sagiv (1995) found that the organization of values in college students is quite similar to that for adult teachers, any claims regarding the generalizability of this model must be tempered by this limitation of sampling. Furthermore, we sampled from only 15 cultures and provinces around the world, and although every populated continent was represented, sub-Saharan Africa was notably absent from among the cultures we investigated. And of course all cultures and subcultures have their own particularities that make them worthy of sampling, especially if one's aim is to catalogue all possible pursuits and the way in which they are organized.

Third, the measure we used, like all measures, has its limits, and thus it would be interesting to see whether parallel results emerge with other measures that operationalize people's aims in life in other ways. For example, it would be interesting to examine whether idiographic means of assessing people's goals (e.g., Emmons, 1989; Sheldon & Kasser, 1995) result in similar goal organizations. Relatedly, because the Aspiration Index was designed by Westerners, it is possible that some goals that non-Westerners pursue were absent and thus unable to influence the form of the circumplex. It would be worthwhile to conduct future studies in which participants from a variety of cultures generate goals rather than respond to goal items provided by the experimenters. Such research could thus determine whether any frequently occurring contents have been missed in the present study and then determine whether the addition of such goals modifies the circumplex organization that we identified in the present study.

Finally, we surely did not sample all possible pursuits for which humans might strive: for example, goals for knowledge or aesthetics (Maslow, 1968) or for ecologically sustainable ways of living (e.g., Dunlap & Mertig, 1995; Schwartz & Boehnke, 2004; Stern & Dietz, 1994) are notably absent, as are a variety of other goals around which individuals might organize their lives. The real challenge of future research will be to make specific predictions about where any additional goals might fall in the circumplex we present in Figures 1 and 3. For example, we would hypothesize that goals for knowledge would probably have more of a self-transcendent and intrinsic than physical and extrinsic quality and would thus fall somewhere close to community feeling in the circumplex; that prediction, like others that might be made, is an empirical question. Further, if enough additional goals were measured, perhaps a third dimension might be identified; thus, we recognize that the present two-dimensional model may not be the final word on goal organization, even though it is seemingly a clear advance over extant models.

In addition to studies addressing the limitations listed above, future research could address a variety of other questions based on the circumplex model of aspirations we have described. For example, we are already in the process of analyzing data to investigate how cultures are similar and/or different in the relative importance they place on the different goals listed in Table 1 and how ratings of the importance and likelihood of attainment of those goals relate to measures of happiness and well-being. A variety of other constructs might also be predictable from the model presented in Figures 1 and 3, including political, social, and environmental behavior; quality of relationships; and personal interests. Further, it would be of great interest to better understand the developmental precursors of the relative importance people place on particular goals (e.g., Kasser, Koestner, & Lekes, 2002; Kasser, Ryan, Zax, & Sameroff, 1995) as well as how the importance they place on different goals changes throughout the life span (e.g., Sheldon & Kasser, 2001).

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